

9.—*South African Crustacea* (Part X of S.A. Crustacea, for the Marine Investigations in South Africa).—By the Rev. THOMAS R. R. STEBBING, M.A., F.R.S., F.L.S., F.Z.S., Fellow of King's College, London, Hon. Memb. of New Zealand Inst., Hon. Fellow of Worcester College, Oxford.

(Plates XVIII–XXVII of Vol. XVII. Plates XCVIII–CVII of Crustacea.)

OF the thirty-six species noted in this contribution ten are regarded as new to science, and for three of them new genera have been named, *Dairoides* in the family Xanthidae of the Cyclometopa, *Xeinostoma* in the family Cyclodorippidae of the Oxystomata, and *Hapaloptyx* in the family Uroptychidae of the Galatheidea. Notice is taken of Dr. Ihle's identification of my genus *Nasinatalis*, 1910, with *Corycodus*, A. Milne-Edwards, 1880, and the transfer of *Corycodus disjunctipes* from the Raninidae to the Cyclodorippidae. The specific validity of *Platymaia turbynei* is accepted, as proposed or suggested by Miss Rathbun.

Mr. Keppel Barnard has pointed out to me that the locality given in Part IX, p. 26, of this series for *Hyastenus uncifer*, Calman, is misleading, since "Pietermaritzburg is at least 50 miles from the sea." Whatever the explanation may be, my authority was correctly quoted. Perhaps Pietermaritzburg was only added to indicate whereabouts in Natal the "Umsunduzi River" should be looked for, without any intention to imply that the marine species had visited the inland town.

It may be worth mentioning that the paper has been unavoidably curtailed and its publication considerably delayed, owing to those gigantic troubles, still reluctantly subsiding, which have extended their interference to efforts the most unambitious and peaceful.

BRACHYURA GENUINA.

TRIBE OXYRRHYNCHA.

FAMILY INACHIDAE.

GEN. PLATYMAIA, Miers.

1886. *Platymaia*, Miers, Challenger Brachyura, p. 12.

1918. ,, Rathbun, Fisheries, Australia, F.I.S. Endeavour, vol. 5, pt. 1, p. 7.

PLATYMAIA TURBYNEI, Stebbing.

1902. *Platymaia turbynei*, Stebbing, S. Afr. Crust., pt. 2, p. 3, pl. 5, in Gilchrist's Marine Investigations of S. Africa.
1918. " " Rathbun, Fisheries, Australia, F.I.S. Endeavour, vol. 5, pt. 1, p. 9.

Miss Rathbun decides that the specimens which Wood-Mason and Alcock, Chun and Doflein identified with *P. wyville-thomsoni*, Miers, should be distinguished from that species under the new name of *P. alcocki*. Further it appears that in 1908 and 1910 I ought not to have accepted Doflein's identification of my species with that which has now been named *P. alcocki*, for in regard to this Miss Rathbun writes, "The name *P. turbynei*, Stebbing, cannot be applied to the above form [*P. alcocki*] because it is differentiated by the characters set forth by Stebbing, *e. g.* the propodus of the penultimate leg of *turbynei* is about twice as long as the same article in the young male of similar (larger) size of *P. alcocki*. Compare Stebbing's pl. 5 with Doflein's pl. 22, fig. 1." In the text of my paper above cited it is obvious that on page 5 in the top line "sixth joint" should be read instead of "fifth joint," as shown by the figure which Miss Rathbun quotes.

FAMILY BLASTIDAE.

(For systematic references see these Annals, vol. 6, pp. 283, 288, 1910.)

GEN. DOCLEA, Leach.

1815. *Doclea*, Leach, The Zoological Miscellany, vol. 2, p. 41.
1895. " Alcock, J. Asiat. Soc. Bengal, vol. 64, pt. 2, pp. 165, 225.
- 1918 " Rathbun, Fisheries, Australia, F.I.S. Endeavour, vol. 5, pt. 1, p. 16.

DOCLEA MURICATUS (Herbst).

1788. *Cancer muricatus*, Herbst, Krabben und Krebse, pt. 7, p. 211, pl. 14, fig. 85.
1793. " " Fabricius, Ent. Syst., vol. 2, p. 459.
1798. *Inachus muricatus* and *hybridus*, Fabricius, Suppl. Ent. Syst., p. 355.

1834. *Doclea hybrida* and *muricata*, Milne Edwards, Hist. Nat. Crust., vol. 1, pp. 294, 295.
1895. *Doclea muricata* and *hybrida*, Alcock, J. Asiat. Soc. Bengal, vol. 64, pt. 2, pp. 230, 231.

Under the last reference Alcock supplies more of the bibliography and a comparison of the two species which suffices to my mind to make the second name superfluous, though it is the one which would apply to our specimen were such distinction really needed.

From the little notch in the rostrum to the apex of the hindmost spine the carapace measures 38 mm. Across the widest part the breadth is 29 mm. The elevations in the median line longitudinally are blunt. In the right cheliped the chela is scarcely longer than the finger of the second peraeopod, with the breadth of the palm equal to the length of the thumb, both this and the rather longer curved finger being considerably shorter than the palm. The specimen is a male, with the left cheliped missing.

Locality. Point Shepstone, W.N.W. 2 miles; depth 34 fathoms. A 1355.

TRIBE CYCLOMETOPA.

FAMILY XANTHIDAE.

GEN. DAIROIDES, nov.

Extensively tuberculate carapace rotundiform except at points of greatest breadth. Pleon of male of seven segments, third segment the broadest, seventh with narrowly rounded apex. Front of carapace between the orbits about one-fourth of the greatest breadth. Mandibular palp two-jointed. Third joint of third maxillipeds strongly tuberculate, distally widened, fourth joint narrow at base, distally as wide as the third joint, its anterior margin produced into a strong tooth outside the fifth joint. Chelipeds unequal, cristiform. Ambulatory limbs with fourth, fifth and sixth joints not expanded but strongly and in part spinosely tuberculate, the seventh joint not tuberculate but felted with minute spinules, and ending in a small curved horn-like nail. The male organ of the second pleopod very long and slender with acute apex.

DAIROIDES MARGARITATUS, n. sp.

Plate XCVIII.

The delicate specimen for which the new genus is instituted arrived from the Cape in company with eight and a quarter of its limbs, but all of them detached from the body, so that the respective lengths of the ambulatory legs could not be assigned with certainty. The somewhat depressed front of the carapace was also damaged, leaving its proper character indefinite. The affinity of the species seems to be with *Daira* and *Actaea*, for though the mouth-organs make a nearer approach in shape to those figured by de Haan for his *Cycloës*, the third maxillipeds are strictly confined to the mouth cavity, not, as in that genus, produced to the frontal margin.

The carapace, about 31 mm. broad at the broadest part below the middle, is about 22 mm. long. Dorsally it is covered by a mass of shining tubercles, the crowding of which obscures their symmetrical arrangement. On the ventral surface curved lines in front of the mouth cavity and long lines of more or less bead-like prominences on either side of that cavity and the pleon, together with the ornamentation of the pleon itself and of the third maxillipeds, produces a very elegant appearance. Had the verrucose chelipeds and horny walking-legs been in position, they would have diversified, perhaps without enhancing, this artistic display. At the hinder end of the antero-lateral margin a triplet of tubercles makes a decided projection; between this and the orbit at two points single tubercles feebly project. The shell of the carapace in its intimate structure appears to resemble that which Dana describes for *Actaea cellulosa* and figures for *Actaea areolata*. There is an upper (calcareous?) tuberculate layer with various small perforations and a lower smooth (chitinous?) layer with large cavities over which rest spinulose tubercles, the two layers being connected by chitinous septa at intervals. The little *Chlorodius fragifer*, Adams and White, has the eyes much more widely apart and the teeth of the antero-lateral margins much nearer together. The genus *Actaeomorpha*, Miers, 1878, among the Oxy-stomata, offers perplexing resemblances to the present form, but the third maxillipeds are distinctive.

Locality. Durnford Point, N.W. $\frac{3}{4}$ W. 12 miles; depth 90 fathoms (Zululand). A 1606.

GEN. CARPILIUS, Leach.

1825. *Carpilius*, Leach, in Desmarest, Consid. gⁿ. Crust., p. 104, footnote.

1898. *Carpilius*, Alcock, J. Asiat. Soc. Bengal, vol. 67, pt. 2, pp. 72, 78 (with synonymy).

CARPILIUS MACULATUS (Linn.).

1758. *Cancer maculatus*, Linn., Syst. Nat., ed. 10, p. 626 (reprint).
 1834. *Carpilius maculatus*, Milne Edwards, Hist. Nat. Crust., vol. 1, p. 382.
 1898. ,, ,, Alcock, J. Asiat. Soc. Bengal, vol. 67, p. 79 (with synonymy).

A small specimen, with carapace 20 mm. wide, was obtained by Mr. K. H. Barnard at Mozambique. A 2222.

GEN. CHLORODOPSIS, A. Milne-Edwards.

(See Ann. S. Afr. Mus., vol. 6, p. 300, 1910.)

CHLORODOPSIS AREOLATUS (Milne Edwards).

(See General Catalogue of S.A. Crustacea, 1910, p. 300.)

Specimens obtained by Mr. Barnard at Delagoa Bay. A 2195.

Carapace of male 12.5 mm. wide, 8 mm. long; of female 11 × 6.5 mm.

GEN. PILUMNUS, Leach.

(See Ann. S. Afr. Mus., vol. 6, p. 301, 1910.)

PILUMNUS GRANULATUS, Krauss.

(See General Catalogue of S.A. Crustacea, 1910, pp. 301, 302, and for the genus add M. J. Rathbun, U.S. Fish Comm. for 1900, vol. 2, p. 38, 1901, and U.S.F.C. for 1903, pt. 3, p. 362, 1906, and Tr. Linn. Soc. London, series 2, vol. 14, p. 228, 1911.)

One of the specimens has the carapace 29 mm. broad by 20 mm. long, the corresponding measurements of the other being 24 × 18 mm. The proportions in this specimen agree with those given by Krauss, 4 × 3 lines, equivalent to little more than 8 × 6 mm.—a great disproportion in size. Miss Rathbun reports a specimen of *P. longicornis*, Hilgendorf, 20 × 14 mm.

The present specimens were taken by Mr. Barnard at Durban. A 2250.

FAMILY PORTUNIDAE.

GEN. ACHELOUS, de Haan.

1833. *Achelous* (subgen. of *Portunus*), de Haan, Crustacea Japonica, decas I, p. 8.
1899. „ (subgen. of *Neptunus*), Alcock, J. Asiat. Soc. Bengal, vol. 68, pt. 2, pp. 9, 30.
1901. „ (subgen. of *Portunus*), Rathbun, U.S. Fish. Comm. Bull., 1900, vol. 2, p. 44.
1906. „ „ „ Rathbun, U.S. Fish. Comm. Bull., 1903, pt. 3, p. 371.
1910. „ Stebbing, Ann. S.A. Mus., vol. 6, pt. 4, p. 307.

In defining this genus or subgenus de Haan states that of the nine teeth of the antero-lateral margin the hindmost tooth is scarcely longer than the preceding teeth. In the species now to be mentioned it has been observed that the tooth in question is actually smaller than those which precede it.

ACHELOUS ORBICULARIS, Richters.

1880. *Achelous orbicularis*, Richters, in Möbius, Meeresf. Maurit., p. 153, pl. 16, figs. 14, 15.
1893. „ „ Henderson, Tr. Linn. Soc. London, ser. 2, vol. 5, pt. 10, p. 371.
1899. *Neptunus (Achelous) orbicularis*, Alcock, J. Asiat. Soc. Bengal, vol. 68, pt. 2, p. 47.
1906. *Portunus (Achelous) orbicularis*, Rathbun, U.S. Fish. Comm., p. 871, pl. 12, fig. 4.
1911. „ „ „ Rathbun, Tr. Linn. Soc. London, ser. 2, vol. 14, pt. 2, p. 206.

The specimen measures 24 mm. at the broadest part, between the apices of the seventh antero-lateral denticles, with a median length of 18 mm., the length being thus six-eighths of the breadth, as compared with six-sevenths recorded by Alcock. The sub-circular appearance, however, is increased by a slight protrusion of the third maxillipeds in front, and of the pleon to the rear. The telson of the female is triangular, ending bluntly, abruptly narrower than the preceding segment. The first two segments of the pleon are extremely short, not clearly separated. The third segment is the widest of all, sharply ridged, not very long; the fourth is also short, exceeded in breadth by the fifth, which,

like the sixth, has considerable length and breadth. The widened fourth joint and the strongly ridged palm of the chelipeds are noteworthy features in this attractive species.

Locality. Off Umkomaas River; depth 13 fathoms. A 852.

GEN. CHARYBDIS, da Haan.

(See these Annals, vol. 6, p. 306, 1910.)

CHARYBDIS VARIEGATUS (Fabricius).

1798. *Portunus variegatus*, Fabricius, Suppl. Ent. Syst., p. 364.
 1833-5. ,, (*Charybdis*) *variegatus*, de Haan, Crust. Japon., decas 1,
 p. 10, decas 2, p. 42, pl. 1,
 fig. 2.
 1899. *Charybdis* (*Goniosoma*) *variegata*, Alcock, J. Asiat. Soc.
 Bengal, vol. 68, pp. 50
 (*variegatum*), 60 (with
 synonymy).

The small specimen which I refer to this species is a male with the carapace 13 mm. long by 20 mm. in extreme width. The pleon has its second and third segments transversely keeled, the composite third leading by concave margins to the sixth, which has convex margins and is broader than long. According to Alcock the front is cut into six rather pointed teeth (not including the inner supra-orbital angle), whereas de Haan calls the front 8-dentate, with obtuse teeth; in our specimen the four central teeth are not at all pointed. Further, as to the teeth of the antero-lateral margins, while there is agreement as to the size of the large hindmost tooth, Alcock speaks of the others increasing in size from before backwards. It is proper, therefore, to mention that in our specimen the first of the six lateral, though much less sharp than those which follow, is as large as any of the intermediate four, as appears to be the case in de Haan's figure.

Locality. Tugela River, N.W. by N. 22 miles; depth 47 fathoms. A 581.

GEN. PARATHRANITES, Miers.

1886. *Lupocyclus* (*Parathranites*), Miers, Rep. Voy. Challenger,
 Brachyura, vol. 17, p. 185.
 1899. *Parathranites*, Alcock, J. Asiat. Soc. Bengal, vol. 68, pt. 2, pp.
 7, 10, 16.

1906. *Parathranites*, M. J. Rathbun, Bull. U.S. Fish. Comm. for 1903, p. 867.

Alcock, defining this as an independent genus, considers it "nearer to *Bathynectes* than to *Lupocyclus*."

PARATHRANITES ORIENTALIS, Miers.

1886. *Lupocyclus (Parathranites) orientalis*, Miers, Rep. Voy. Chall., Brachyura, vol. 17, p. 186, pl. 17, figs. 1, 1 a-c.
1899. *Parathranites orientalis*, Alcock, J. Asiat. Soc. Bengal, vol. 68, p. 17.

The larger specimen, a male, measures 12.5 mm. in length, with a breadth of 19 mm. between the tips of the outstanding hindmost teeth of the carapace; the smaller specimen of the same sex is 9 mm. long by 14 mm. wide. This specimen in travelling retained all its legs, while the other shed them all; in both the two wide terminal joints of the fifth peraeopods are extremely transparent.

Locality. Umhloti River, N.W. $\frac{1}{2}$ W. 15 miles; depth 100 fathoms. A 580.

TRIBE CATOMETOPA.

FAMILY GONEPLACIDÆ.

(See these Annals, vol. 6, pt. 4, p. 312, 1910.)

GEN. EUCRATE, de Haan.

1835. *Eucrate*, de Haan, Crust. Japon., decas secunda, p. 36.
1900. „ Alcock, J. Asiat. Soc. Bengal, vol. 69, pt. 2, pp. 292, 298.
1908. „ McCulloch, Records Austral. Mus., vol. 7, p. 58.

EUCRATE AFFINIS, Haswell.

1881. *Eucrate affinis*, Haswell, Pr. Linn. Soc. N.S. Wales, vol. 6.
1882. „ „ Haswell, Catal. Austral. Crust., p. 86.
1887. „ „ de Man, J. Linn. Soc. London, vol. 22, No. 137, p. 89, pl. 5, figs. 5-7.
1900. „ *crenata*, var. *affinis*, Alcock, J. Asiat. Soc. Bengal, vol. 69, p. 300.

All these authors call attention to the beaded ridge on the carapace which in this species runs more or less parallel to each postero-lateral border. Dr. de Man suggests that it may be a synonym of *Pilumnoplax sulcatifrons*, Stimpson, 1858, and Alcock makes the same suggestion in regard to *Pseudorhombila sulcatifrons*, var. *australiensis*, Miers, 1884. Targioni Tozzetti, when re-discussing Stimpson's species in 1877, says that Stimpson assigns to the male a length of mill. 32·5, and a breadth of mill. 41, whereas Stimpson's actual statement is "Carapacis long, 0·325; lat. 0·41 poll." These measurements are not much in excess of our specimen, which has length of carapace 6·5 mm., greatest breadth 8 mm. All but one of the ambulatory limbs were missing.

Locality. Point Shepstone, W.N.W. 2½ miles; depth 24 fathoms. A 854.

FAMILY OCYPODIDÆ.

(See Ann. S. Afr. Mus., vol. 6, p. 325, 1910.)

GEN. CLEISTOSTOMA, de Haan.

1833. *Cleistostoma* (subgen. of *Ocypode*) (part), de Haan, Crust. Japonica, decas prima, p. 2, decas secunda, pp. 26, 55, 1835, *Cleistotoma* in index, decas 7, pp. 233, 234, 1849. *Cleistotoma* on pl. 7, *Cleistotoma* on pl. 8.
1837. *Cleistotoma*, Milne Edwards, Hist. Nat. Crust., vol. 2, p. 67.
1838. ,, McLeay, Annulosa of S. Africa, p. 64.
1843. ,, Krauss, Südafrik. Crust., p. 40.
1852. *Cleistostoma* (part), Dana, U.S. Expl. Exp., vol. 13, p. 312.
1900. *Cleistostoma* Alcock, J. Asiat. Soc. Bengal, vol. 69, pp. 294, 372.
1902. ,, Alcock, Illustr. Crust. Investigator, pl. 64, fig. 1.
1910. *Cleistostoma* Stebbing, Ann. S. Afr. Mus., vol. 6, p. 328.
1910. ,, Rathbun, Kjöbenhavn Vid. Selsk. Skr., ser. 7, vol. 5, p. 323.

CLEISTOSTOMA LEACHII (Audouin).

1825. *Macrophthalmus leachii*, Audouin, Explic. planches Crust. Égypte (Savigny), pl. 2, fig. 1.
1835. *Ocypode* (*Cleistostoma*) *dilatata*, de Haan, Crust. Jap., pp. 27, 55, pl. 7, fig. 3.

1837. *Cleistotoma leachii*, Milne Edwards, Hist. Nat. Crust., vol. 2,
p. 68.
1838. „ „ *edwardsii*, McLeay, Annulosa of S. Africa, p. 64.
1843. „ „ „ Krauss, Südafrik. Crust., p. 40.
1910. *Cleistostoma edwardsii*, Stebbing, Ann. S. Afr. Mus., vol. 6,
p. 328.

Krauss, in describing *Macrophthalmus boscii*, Audouin, refers it to Savigny's pl. 2, fig. 1, and states that the usual fulness of detail supplied by Savigny is on this occasion wanting. Miers in the Crustacea of the "Alert" and in his "Challenger" report gives the same reference, while following A. Milne-Edwards in assigning the species generically to *Euplax* (*Chaenostoma*), but the authors are evidently alluding to fig. 2 of Savigny's plate. His fig. 1 has the accustomed amplitude of finely drawn details, which excellently correspond with those of a specimen from South Africa.

Our specimen has a carapace about 8 mm. long by 10 mm. broad, the rostrum deflexed, lightly bifid, the orbits oblique, the lateral borders setose. The pleon of the female is as figured by de Haan, the seventh segment broad, though not very long.

The characteristic mouth-organs are well shown on Savigny's plate, unless the length of the mandibular palp is exaggerated, for in our example that feature is only normal. Both pairs of maxillae have their laminae well developed and powerfully setose. In the first maxillipeds the principal joint of the endopod is elongate with parallel sides and rounded apex. The third maxillipeds have the fourth joint as long as the broad third joint, and even broader by the bulging of its convex outer margin; the epipod is more elongate than that shown in Savigny's figure. The right cheliped of the female is missing, the left is in accord with Savigny's figure.

Locality. Swartkops River, Port Elizabeth. A 850.

FAMILY PINNOTHERIDAE.

GEN. PINNOTHERES, Bosc., 1802.

(For the family and genus see these Annals, vol. 6, p. 330, 1910, and add—

1910. *Pinnotheres*, M. J. Rathbun, Kjöbenhavn, Vid. Selsk. Skr., ser. 7, vol. 5, p. 330.)

PINNOTHERES PISUM (?) (Linn.).

1767. *Cancer pisum*, Linn., Syst. Nat., ed. 12, p. 1039.
1802. *Pinnotheres pisum*, Bose, Hist. Nat. Crust., vol. 1, p. 243.
1817. " " Leach, Malac. Podophth. Brit., pl. 14,
 figs. 1, 2, 3.
1908. " " Lagerberg, Göteborgs K. Vet. Handl., ser.
 4, vol. 11, p. 105, pl. 3, figs. 9-11.
1916. " " Borradaile, Brit. Antaret. Exp., Zool.,
 vol. 3, p. 100, fig. 12.

A specimen, labelled "from *Avicula* (pearl oyster)," taken in Mossel Bay, shows a very close resemblance to the figures which Leach gives of *P. pisum*. The *Avicula* purports to come from a depth of 12 fathoms, but the crab had become dry before it attracted attention. Accordingly it is no longer in a good state for precise examination. It has the broad pleon of an adult female, from which a multitude of ova have probably escaped. A 2644.

PINNOTHERES OSTREARIUS, Rathbun.

1901. *Pinnotheres ostrearius*, Rathbun, Bull. U.S. Fish. Comm. for
1900, vol. 2, p. 20, figs. 3 a-b.

A specimen, female, with carapace 8 mm. long, and 10 mm. broad, has the chela and third maxilliped so fully answering to those figured by Miss Rathbun for her species above-named that the identification seems reasonable. The specimen, partially dried, was procured by Mr. Barnard from a *Modiola* shell, in Delagoa Bay. A 3145.

A similar specimen, of the same sex, is recorded as taken from an ascidian. The carapace measures about 10 mm. in length by 11 mm. in breadth. The small but elongate mandible has a curved cutting edge fringed with a dozen small denticles followed below by a powerful tooth; the terminal joint of the palp is fringed with setae. The meral joint of the third maxilliped is broader than that shown in Miss Rathbun's text-figure, and the terminal joint seems to be considerably more than half the length of the preceding joint, but the setose furniture makes a precise estimate difficult.

Locality. St. James', Cape Peninsula.

TRIBE OXYSTOMATA.

FAMILY CYCLODORIPPIDAE.

1892. *Cyclodorippidae*, Ortmann, Zool. Jahrbüch., vol. 6, pp. 552, 558.
1900. ,, A. M.-E. et Bouvier, Décap. Travailleur et Talisman, p. 34.
1901. *Dorippidae*, Rathbun, Bull. U.S. Fish. Comm. for 1900, vol. 2, pp. 5, 89.
1903. ,, Lankester, Q.J.M.S., vol. 47, p. 456.
1905. ,, Alcock, Ann. Nat. Hist., ser. 7, vol. 15, p. 565 (with synonymy).
1914. *Cyclodorippidae*, Parisi, Atti. Soc. Ital. Sci. Nat., vol. 53, p. 297 (20).
1916. ,, Ihle, Zool. Anzeiger, vol. 46, p. 359.
1916. ,, Ihle, Siboga-Exp., Mon. 39b¹, p. 98 (*Cyclodorippinae*, pp. 152, 154).

GEN. CORYCODUS, A. Milne-Edwards.

1880. *Corycodus*, A. M.-Edw., Bull. Mus. Comp. Zoöl., vol. 8.
1902. ,, A. M.-Edw. et Bouvier, Mem. Mus. Comp. Zoöl., vol. 27, p. 86.
1910. *Nasinatalis*, Stebbing, Ann. S. Afr. Mus., vol. 6, p. 340.
1916. *Corycodus*, Ihle, Zool. Anzeiger, vol. 46, p. 361.
1916. ,, Ihle, Siboga-Exp., Mon. 39b¹, p. 124.

CORYCODUS DISJUNCTIPES (Stebbing).

1910. *Nasinatalis disjunctipes*, Stebbing, Ann. S. Afr. Mus., vol. 6, p. 343, pl. 42.
1916. *Corycodus bouvieri*, Ihle, Zool. Anzeiger, vol. 46, p. 362.
1916. ,, *disjunctipes*, Ihle, Siboga-Exp., Mon. 39b¹, p. 124, fig. 68 in text.

This species, as shown by Ihle, should be transferred from the Raninidae to the Dorippidae or Cyclodorippidae, if the latter be accepted as an independent family. Ihle includes in it the genera *Cynopolus*, *Cymonomus*, *Corycodus*, *Clythocerus*, *Cyclodorippe* and *Tymolus*.

Gen. XEINOSTOMA, nov.

Carapace orbicular, rostral process broad, arched, produced beyond the orbits. Pleon in both sexes consisting of six segments, of which the first and sixth are much the narrowest. Eye-stalks of moderate length, slightly bent. Palp of mandibles three-jointed. First maxillæ having a long spine-like termination to the palp. Second maxillæ feebly developed except as to the vibratory lamina. First maxillipeds with first joint small, second narrow at apex, rest of endopod broadly produced beyond the exopod to a squared apex; exopod with a small one-jointed flagellum. Second maxillipeds having the terminal joint of the endopod attached in cheliform fashion on the inner side of the penultimate, the long narrow exopod ending in a small one-jointed flagellum. Third maxillipeds reaching beyond the broad front of the buccal frame, the exopod not concealed, a very elongate oval, with no flagellum, the fourth joint of the endopod considerably shorter than the third but fully as broad, approaching a semicircle in shape, with the fifth joint attached below the apex of the inner margin. The chelipeds denticulate, stouter than the setose second and third peraeopods. The fourth and fifth peraeopods very slender, subdorsal. The generic name is compounded of the Ionic form $\xi\epsilon\iota\nu\omicron\varsigma$ strange, and $\sigma\tau\omicron\mu\alpha$, mouth.

There appear to be many points of re-semblance between this genus and *Cyclodorippe*, A. Milne-Edwards, and *Clythrocerus* of the same author. The figures of Ortmann's *Cyclodorippe uncifer* by Ortmann and Ihle illustrate this, while the differences in the pleon are very marked, as seen in Parisi's illustration of the same species.

XEINOSTOMA EUCHEIR, n. sp.

Plate XCIX.

The finely denticulate rostrum is concave above, the surface of the carapace traversed by ill-defined transverse and longitudinal depressions, the antero-latero-lateral margins denticulate, a conspicuous tooth at the external corner of the orbit and a similar one near the beginning of the curved setulose postero-lateral border; the hind margin shallowly excavate. The sternal plastron is acutely produced between the bases of the third maxillipeds in front and deeply excavate behind for the terminal segment of the pleon. In the male the second segment of the pleon is the widest though proximally very narrow; in the female the third segment is the widest but subequal to the fourth.

The eyes as preserved are a light orange in colour; the stalk carries several setules. The first antennae have the three joints of the peduncle nearly equal in length, but the first much the stoutest; the flagella are very short. In the second antennae the slender six-jointed flagellum is slightly longer than the peduncle.

The mandibles are rather short but strong, with the palp membranous. The first and second maxillae are rather feeble. In the first maxilliped the epipod is very broad at the base. The second maxillipeds appear remarkable by exhibiting a character familiar in the first maxillipeds of some other genera, such as *Pinnotheres*, Latreille, and *Pinnixa*, White, namely the chela-like arrangement of the ultimate and penultimate joints of the endopod. The rounded ends, however, of both joints make any chelate function in the present case rather difficult to explain. The place of insertion of the seventh joint is similar in *Hexapus* but without cheliform prolongation of the sixth joint. The epipod of these maxillipeds is narrow; in both sexes it shows at the base two small elevations of the outer margin. The third maxillipeds have been already described as part of the generic character.

The chelipeds are massive compared with the other limbs, and show various rows of granules and setules on the fourth to the seventh joints. The curved fingers close accurately together, the movable finger equalling the palm in length. The second peraeopods are shorter than the third, but similar in structure, both pairs having the last two joints strongly setose; the finger in the third pair is very elongate. The fourth and fifth peraeopods are very much smaller, with the last two joints a little curved as if for grasping. These limbs were present only in one of the specimens, and only on the left side of that, as shown in the figure. I have been unwilling to remove them for more accurate delineation, and no representatives were present among the detached limbs of other specimens.

The male stilet is elongate, its needle-like apex reaching nearly the end of the pleon. The four pairs of pleopods of the female show long plumose setae on one branch and simple setae on the other.

The carapace of the male specimen figured has a length of 9 mm., with a rather smaller breadth.

Locality. Cape Vidal, N.N.E. $\frac{1}{4}$ N. 95 miles; Zululand; depth 80 fathoms. A 1608.

The specific name is from the Greek $\epsilon\upsilon\chi\epsilon\iota\rho$ fair-handed.

GEN. CYMONOMUS, A. Milne-Edwards.

1880. *Cymonomus*, A. M.-Edwards, Bull. Mus. Comp. Zool., vol. 8, p. 26.

1900. *Cymonomus*, A. M.-E. et Bouvier, Crust. Décap. Travilleur et Talisman, p. 34.
1902. „ A. M.-E. et Bouvier, Mem. Mus. Comp. Zoöl., vol. 27, p. 81.
1903. „ Lankester, Q.J.M.S., vol. 47, p. 450.
1904. „ Dofflein, Valdivia Exp., Brachyura, pp. 33, 152, 190, 282.
1905. „ Alcock, Ann. Nat. Hist., ser. 7, vol. 15, p. 565.
1908. „ H. J. Hansen, Ingolf-Exp., Crust. Malac., vol. 3, pt. 2, p. 20.
1916. „ Ihle, Zool. Anzeiger, vol. 46, p. 360, and Siboga-Exp., Mon. 396¹, p. 118.

CYMONOMUS TRIFURCUS, n. sp.

Plate C.

The present species seems to be nearly allied to the East African form which Dofflein figures and briefly describes under the name "*Cymonomus granulatus Valdiviae*, Lank." (*loc. cit.*, pp. 33, 284, pls. 11, fig. 5; 12, figs. 1-3; 38, fig. 8; 44, fig. 7). But the illustration, most suggestive of a real alliance, by a three-pronged rostral plate, is itself distinctive, the true rostrum being in Dofflein's form not granular, shorter than the eye-stalks, and more nearly parallel with them. Also his drawing of the third maxilliped shows the fourth joint more strongly produced beyond the insertion of the fifth joint and the principal joint of the exopod extending beyond the endopod.

In the present species there is no suture or line of demarcation dorsally separating the trifurcate rostral plate from the rest of the carapace. The widely-divergent lateral prongs, however, in ventral view, show a little rounded knob apically, white and smooth as preserved, presumably the vestigial eye. Milne-Edwards and Bouvier state that in this genus the segments of the pleon are all distinct in both sexes, but their figures show only six segments. Alcock also speaks of the segments being all distinct. In the form here considered I could only find a pleon with six segments, the second and third being, perhaps, consolidated. The French authors say that the males have two pairs of pleopods modified as sexual organs, nearly resembling those of the *Dromiidea*, except that the terminal article of the second pair is not stiliform. Our South African form, on the contrary, has in this pair a sharp stiletto-like apex, but *in situ* both pairs have their terminals strongly folded inwards instead of being stretched backwards as necessitated in the figures to show the details of their

structure. In the second pair the terminal part is shaped rather like a stocking with a very slender foot and a binding at the knee (really consisting of muscles).

In the first antennae the second and third joints of the peduncle are subequal, each a little shorter than the first and longer than the principal ten-jointed flagellum.

The mandibles are strong, rather short, with the palp apparently slight, three-jointed. The first and second maxillae and the first maxillipeds are in close agreement with those figured by Milne-Edwards and Bouvier for *C. granulatus* (Norman). In their figure of the second maxillipeds they represent the flagellum of the exopod as preceded by a short joint, starting from a point where in our species there is a marginal tooth, but no articulate division of the elongate main joint of the exopod.

In the chelipeds the short, strongly-curved wrist shows some sharp teeth on the inner side. In the second peraeopod the fourth joint is decidedly longer than the finger. In the third peraeopod it is equal in length to the finger. The French authors say in regard to these limbs that the fourth joint is longer than the sixth and a little shorter than the fingers. In the fourth and fifth peraeopods they write that the fingers are "*très arqués*"; but their figure does not give the effect of a sharply-bent hook as found in the present species.

The carapace measures about 7 mm. in length by 6 mm. in breadth.

Locality. Buffalo River N.W. $\frac{1}{2}$ W. 19 miles (East London); depth 300 fathoms. A 884.

Two female specimens, with no limbs, but each containing nine or ten large eggs, agree closely in appearance with the male, one having just the same dimensions of the carapace; in the pleon, however, the outer margins of the first and second segments show almost a continuous curve, instead of a re-entering angle, and the second is the longest of all the segments.

Locality. Cape St. Blaize, N. by E. 73 miles; depth 125 fathoms. A 1612.

FAMILY LEUCOSIIDAE.

(See these Annals, vol. 6, pt. 4, p. 335, 1910.)

GEN. NURSIA, Leach.

1817. *Nursia*, Leach, Zool. Misc., vol. 3, p. 18.

1855. ,, Bell. Tr. Linn. Soc. London, vol. 21, p. 307.

1896. ,, Alcock, J. Asiat. Soc. Bengal, vol. 65, pt. 2, pp. 166, 170, 178.

Alecock notes that in this genus the fourth joint of the third maxillipeds is not much more than half the length of the third joint measured along the inner border, while in *Ebalia* it is a great deal more than half that length. Leach notes that in *Ebalia* it is the last pleon segment that carries a dentiform process, but in *Nursia* the penultimate segment. These considerations point to the inclusion of the species here described in the genus *Nursia*.

NURSIA SCANDENS, n. sp.

Plate CVIA.

In general appearance it will be seen that this species is not unlike that described and figured as *Ebalia jordani*, n. sp., by Miss Rathbun in 1906 (U.S. Fish. Comm., p. 889, pl. 15, fig. 3, text-figs. 43, *a*, *b*), where the pleon is of the *Nursia* type, but the maxilliped is undescribed. In our species the fourth joint of the maxilliped is less than half the length of the third joint, the chelipeds are more slender, with the fingers more slender, as they should be for the *Nursia* form, and for the ambulatory limb in the single one that was present the finger is relatively much longer than in *Ebalia jordani*. The latter appears to be a much larger form—length of male type 11.4 mm., width 11.2 mm.; whereas our specimen, evidently by its pleopod an adult male, is in middle line of the carapace only 4.5 mm. long, with a width of 5 mm.; between the front and hind processes the length about equals the width. *E. salamensis*, Doflein, 1904, seems to be distinguished by its pleon.

Locality. Cove Rock, N.W. $\frac{3}{4}$ W. 13 miles; depth 80–130 fathoms. Specimen apparently climbing in a small thicket of *Cerataisis ramosus*, Hickson. A 4049.

GEN. LITHADIA, Bell.

1855. *Lithadia*, Bell, Tr. Linn. Soc. London, vol. 21, p. 305.
 1860. ,, Stimpson, Ann. Lyceum. Nat. Hist. Mus. York, vol. 7,
 p. 238.
 1870. ,, Stimpson, Bull. Mus. Comp. Zoöl., vol. 2, pt. 2, p. 159.
 1871. ,, Stimpson, Ann. Lyceum. Nat. Hist. New York, vol. 10,
 p. 115.
 1872. *Ebalia* (*Lithadia*), von Martens, Arch. Naturg., vol. 38, pp. 114,
 115.
 1886. *Lithadia*, Miers, Rep. Voy. Challenger, vol. 17, pt. 49, p. 318.
 1901. ,, M. J. Rathbun, U.S. Fish. Comm. for 1900, vol. 2, p. 88.

LITHADIA BARNARDI, n. sp.

Plate CI.

The rather narrow front is scarcely emarginate. It projects a little beyond the small eyes, but being slightly upturned may, according to the point of view, appear to be on a level with them. The specimen figured must be considered abnormal, the antero-lateral wing on the right of the carapace having no counterpart on the left. After the drawing of the plate, two specimens, a male and a female, were examined and showed no trace of such an unusual outgrowth. The whole surface of the carapace is covered with tubercles, diversified by prominent lamellae, six of which in the male are arranged in a forward curve across the middle. In the female the number is reduced to four by coalescence in the two outer pairs. Behind this row in the centre line two other lamellae are placed—a large one near the hind border and a smaller intermediate. The pleon of the female specimen figured firmly enclosed a great number of eggs. The first six segments form a very broad oval, smoothly trilobed, the third to the sixth coalesced, but with suture-markings, the telson triangular, very small. In the male the pleon from the third segment to the apex is narrowly triangular.

The mandibles have a small three-jointed palp. The inner plate of the first maxillae is small and curved, palp-like, but in the wrong position: the palp was not satisfactorily made out. In the third maxillipeds the fourth joint is much more than half the length of the third and extends considerably beyond the long joint of the exopod. The opaque parts of these maxillipeds are tuberculate on the outer lower surface and the exopod is longitudinally grooved on its inner upper surface.

The fingers of the first peraeopods (chelipeds) close completely with the apices crossing; the palms are longer than the fingers and stout, but longer than broad; they are slightly tuberculate, but the three preceding joints, especially the long fourth joint, strongly so. The second to the fifth pairs of peraeopods are small, with the fourth, fifth and sixth joints tuberculate, the fingers setulose.

The carapace of the specimen figured measured approximately 9 mm. long, 9.5 mm. broad; the female from the second locality 9 mm. long, 11 mm. broad, and the accompanying male 8 mm. long, 9 mm. broad.

Localities. Umhloti River, N.W. by W. $2\frac{3}{4}$ miles; depth 25 fathoms. A 504. $32^{\circ} 53' S.$, $28^{\circ} 12' E.$; depth 45 fathoms. A 508.

The specimens were obtained by Mr. Keppel Barnard, after whom I do myself the pleasure of naming the species.

GEN. LEUCOSIA, Fabricius.

1798. *Leucosia*, Fabricius, Suppl. Ent. Syst., p. 349.
 1896. „ „ Alcock, J. Asiat. Soc. Bengal, vol. 65, p. 209.
 1906. „ „ Nobili, Bull. Sci. France-Belgique, vol. 40, p. 97.
 1907. *Leucosides*, Rathbun, Mem. Mus. Comp. Zool., vol. 35, p. 68.

The retention of *Leucosia*, Fabricius, and the propriety of ignoring *Leucosia*, Weber, with some similar questions of nomenclature depend on the argument which I have used in Journ. Linn. Soc. Zool., vol. 29, p. 333, 1905.

LEUCOSIA WHITEI, Bell.

1855. *Leucosia whitei*, Bell, Tr. Linn. Soc. London, vol. 21, p. 289,
 pl. 31, fig. 2.
 1896. „ „ Alcock, J. Asiat. Soc. Bengal, vol. 65, pp. 214,
 225 (with synonymy).
 1910. *Leucosides whitei*, Rathbun, Mém. Ac. Sci. Denmark, ser. 7,
 vol. 5, p. 310.

The South African specimen which I refer to this small species is a female, devoid of all the ambulatory limbs, with a carapace 10 mm. long by 9 mm. broad. It is fairly in agreement with Bell's figures and description, the palm of the chelipeds being "tumid, scarcely longer than broad," and in particular the broadly oval pleon of the female has colour markings "interrupted in the middle" which indicate boundaries of coalesced segments. These markings, however, indicate a coalescence of four segments, rather than only three, of which Bell and Alcock speak.

Locality. Umhloti River, N. N.W. 1½ miles; depth 27 fathoms. A 3277.

FAMILY RANINIDAE.

(See Ann. S. A. Mus., vol. 6, pt. 4, p. 339, 1910.)

GEN. RANINOIDES, Milne Edwards.

1837. *Raninoides*, Milne Edwards, Hist. Nat. Crust., vol. 2, pp. 191,
 196.

1888. *Raninoides*, Henderson, Rep. Voy. Challenger, vol. 27, pt. 69, pp. 26, 27.
 1896. ,, Alcock, J. Asiat. Soc. Bengal, vol. 65, pt. 2, pp. 290, 292.

RANINOIDES SERRATIFRONS, Henderson.

1893. *Raninoides serratifrons*, Henderson, Tr. Linn. Soc. London, ser. 2, vol. 5, pt. 10, p. 408, pl. 38, figs. 10-12.
 1896 ,, ,, Alcock, J. Asiat. Soc. Bengal, vol. 65, pt. 2, p. 293.

The carapace from the apex of the serrate rostrum is 18.5 mm. long in the median line, with a breadth of about 10 mm. The sternum between the first three pairs of legs is nowhere linear, increasing in width behind the bases of the chelipeds and then narrowing to a pair of nodules between the basis of the second peracopods, whence it again widens almost to the interval between the third pair. On the thumb of the chelipeds in our specimen the inner margin has only four denticles, whereas in Henderson's smaller example there were five. The last pair of limbs are small, but not filiform, the terminal joint oval, its distal extremity the broader.

Locality. Point Shepstone, W.N.W. 2 miles; depth 34 fathoms. A 1436.

GEN. COSMONOTUS, Adams and White.

1847. *Cosmonotus*, Adams and White, Pr. Zool. Soc. London, p. 227.
 1848. ,, Adams and White, Crust. Voy. Samarang, p. 60.
 1852. ,, Dana, U.S. Expl. Exp., vol. 13, p. 404.
 1888. ,, Henderson, Rep. Voy. Challenger, vol. 27, pt. 69, p. 32.

COSMONOTUS GRAYII, Adams and White.

1847. *Cosmonotus grayii*, Adams and White, Pr. Zool. Soc., p. 227, 2 figures.
 1848. ,, ,, Crust. Voy. Samarang, p. 60, pl. 13, figs. 3, 3a, 3b.
 1858. ,, ,, Stimpson, Pr. Ac. Philad., p. 79 (241).
 1888. ,, ,, Henderson, Rep. Voy. Challenger, vol. 27, p. 33.
 1904. ,, *grayii*, Doflein, Valdivia-Exp., Brachyura, p. 51, pl. 18, figs. 5-8.

Adams and White for their Borneo specimen give the measurements: "Carapace about an inch in length, and half an inch wide." Our specimen is much smaller, the carapace being only 7 mm. long and about 6 mm. between the apices of the antero-lateral pair of denticles. The length indeed is rather less than 7 mm. in the central line in consequence of the deep frontal notch. From the advanced points of this notch the very oblique margin on either side is finely denticulate, ending in a cavity bounded by the comparatively large antero-lateral denticle. As in *Lyreidus*, the third and fourth joints of the third maxillipeds are long and narrow, but here the fourth joint is not longer than the third. The three terminal joints are very small.

Locality. Umvoti River, N. by W. $\frac{1}{4}$ W. 5 miles; depth 56 fathoms, Natal. A 1356.

BRACHYURA ANOMALA.

(See these Annals, vol. 6, pt. 4, p. 341, 1910.)

FAMILY DROMIDAE.

(See the reference above given, p. 342, and add—

1913. *Dromiidae*, Ihle, Siboga Exp., Dromiacea, vol. 39b, p. 3.)

GEN. CRYPTODROMIA, Stimpson.

1858. *Cryptodromia*, Stimpson, Pr. Ac. Sci. Philad., vol. 10, p. 225.
 1887. .. de Man, Arch. Naturg., vol. 53, p. 398.
 1901. .. Alcock, Catal. Indian Brachyura, fasc. 1, p. 48.
 1903. .. Borradaile, Ann. Nat. Hist., ser. 7, vol. 11, p. 299.
 1907. .. Nobili, Ann. Sci. Nat., ser. 9, Zool., vol. 4, p. 145.
 1907. .. Stimpson, Smithson Misc. Coll., vol. 49, p. 172.
 1911. .. Rathbun, Tr. Linn. Soc. London, vol. 14, p. 194.
 1913. .. Ihle, Siboga-Exp., Dromiacea, vol. 39 b, p. 32.

CRYPTODROMIA MICRONYX, n. sp.

Plate CII.

The present species by its globosity is suggestive of Alcock's *Sphaerodromia*, by the broad fourth joint in the first four pereopods it points to Stimpson's *Petalomera*, but by its characters generally I incline to leave it in *Cryptodromia*.

The rostrum is pretty evenly tripartite but the central tooth is much depressed. A small tooth supervenes between the emerging second antenna and the small eye-stalk. The antero-lateral margins have no teeth, but undulations which indicate positions that four teeth might occupy. The carapace has a smooth shining appearance, with the **H** marking far to the rear in the male specimen figured, the dimensions being 13 mm. in breadth by 11.5 mm. in length. A female without eggs has the carapace 14 mm. broad and 12 mm. long; another, carrying numerous rather large eggs (2 mm. in longer diameter), measured 16 mm. in breadth, with a length of 13.5 mm. The pleon in the female is broader than in the male but not very dissimilar.

The cornea of the eyes is pale. The first antennae have a peduncle of three wide joints of irregular shapes, a very slender ten-jointed flagellum accompanied by a stouter one carrying a broad mass of long setae. In the second antennae the second joint is the largest, widening distally like the third joint of the first pair, the following joints quite short, and the slender flagellum longer than the peduncle.

The mandible appears to have a three-jointed palp, but probably the small first joint is consolidated with the second, with a more abrupt bend than that shown by Ihle for *Cryptodromia tumida*, Stimpson. In other respects the mouth-organs of that species as shown by Ihle are in near agreement with what I find in the new species. Only the uppermost lobe in the second maxilla is here narrower than there, and the third joint of the third maxilliped is here longer than the fourth. Seen from the inner side this fourth joint shows a two-fold excavation between the inner and distal margins.

The chelipeds have three nodules on the fifth joint padded with short felt, of which there is a sheet on one side of the palm. The short stout fingers have white tips following a pink tinge (as preserved); seen from one side they have interlocking denticles, but end-on each shows a tridentate apex, that of the fixed finger (or thumb) being the broader; the fourth joint is very broad, with one edge straight, the opposite very convex.

The second and third peraeopods are alike, with many patches of felt, of rugged build, the fourth joint broad, the fifth triangular, the sixth not longer, rectangular, distally clasping the narrow seventh joint, which ends in a short curved horny nail. The fourth peraeopod, not half as long as the second or third, is barely as long as the fifth but much broader, especially as regards the fifth and sixth joints; the sixth joint is scarcely longer than broad, and ends in a minute nail.

The fifth pair have the fourth joint rectangular like that of the preceding pair, but narrower, and followed by a much narrower fifth joint of equal length; the sixth joint is shorter, and perhaps carries a minute nail. In all three specimens the seventh joint appears to have no representative in the fourth and fifth peraeopods other than a microscopic nail. To the smallness of the nail in the second and third pairs reference is made in the specific name. This will be still more applicable to the case of the fourth and fifth pairs if appearances can be trusted; nor is it likely that all three otherwise well-preserved specimens would have suffered precisely the same injuries.

The characters of the large first and small second pleopods of the male are sufficiently shown by the figures.

Locality. Cove Rock, N.E. by E. $\frac{1}{2}$ E. $\frac{1}{2}$ miles; depth 22 fathoms. A 779.

GEN. CONCHOECETES, Stimpson.

CONCHOECETES ARTIFICIOSUS (Fabricius).

(See these Annals, vol. 6, pt. 4, p. 346, 1910, and for fuller synonymy of genus and species see Marine Investigations in South Africa, no. II, p. 19, 1901.)

An ovigerous female specimen, 17 mm. broad and slightly over 16 mm. long, was obtained by Dr. Gilchrist at the locality "Cape Point N. 81° E., 32 miles; depth 460 fathoms." A rather smaller specimen was devoid of its pleon.

GEN. EUDROMIA, Henderson.

1888. *Eudromia*, Henderson, Rep. Voy. Challenger, vol. 27, pt. 69 pp. ix, 13.
 1903. ,, Borradaile, Ann. Nat. Hist., ser. 7, vol. 11, p. 302.

The leading character for the distinction of this genus from its neighbours is, as Borradaile expresses it, the "front deeply cleft into two prominent rounded lobes." To this may be added the very small pleopods on the sixth pleon segment of the female, and the sternal grooves of that sex ending together. Some of the characters based on the typical species, *E. frontalis*, Henderson, such as "legs not knobbed or ridged," and "the length exceeding the breadth" of the carapace, would exclude the species now to be described.

EUDROMIA BITUBERCULATUS, n. sp.

Plate CIII.

Behind the two very prominent, broadly rounded, and widely separated lobes of the front the carapace has a pair of large, nearly erect tubercles—a conspicuous feature to which the specific name refers. To the rear of the frontal lobes the margins of the carapace diverge strongly, overlapping the orbits and running out into a conspicuously extended tooth on either side by which the width of the carapace is made to exceed its length, even including the frontal lobes. Further back are two pairs of small teeth, and then the postero-lateral margins bend back beyond the broad and straight hind margin. The pleon of the female is trilobed, closely fringed with setae, and on most of the segments having the hind margin furnished with a central and two lateral pads of setules.

The eyes have a short tumid stalk and a small, pale cornea, almost or quite concealed by the carapace above. In the antennae the first joint of the first pair is the largest and the second joint of the second pair. The palp of the mandible appears to be very small. The palp of the first maxilla is very elongate. In the second maxillae the lowest lobe is large, all the others very slender. The fourth joint of the second maxilliped is broad proximally, narrowing distally. In the third pair the fourth joint is longer than the third—the reverse of the relation which Henderson found in *E. frontalis*. In the present species the second joint seen from the outer (lower) side seems to be in coalescence with the third, but is quite distinct on the inner (upper) side. On the whole the antennae and mouth-organs show strong agreement with those of *Cryptodromia*.

The chelipeds have broad tips to the fingers and interlacing denticles on the confronting margins, the wrist nodulous, and the preceding joint denticulately cristate. The second and third pereopods are alike and nodulous. The fourth pair are much smaller, with the hand well defined though very slight, and carrying a well-formed nail. The same is the case with diminished hand in the fifth pair.

The pleopod on the sixth segment of the pleon is very small, in striking contrast to those on preceding segments.

The carapace measured 13 mm. from the advanced median point in the central line, or 15 mm. from front to back laterally, the greatest breadth being 16.5 mm.

Locality. Rooiels River, S.W. by S. $\frac{1}{2}$ S. 2 miles; depth 18 fathoms (False Bay). A 858.

FAMILY HOMOLIDAE.

(See South African Crustacea, pt. 2, p. 20, 1902 [in Gilchrist's Marine Investigations in South Africa].)

GEN. LATREILLOPSIS, Henderson.

1888. *Latreillopsis*, Henderson, Rep. Voy. Challenger, vol. 27, pt. 69,
p. 21.
1912. „ Ihle, Tijdschr. Ned. Dierk. Vereen., ser. 2, vol. 12,
p. 211.
1913. „ Ihle, Siboga-Exp., Mon. 39b, p. 77.

Carapace rectangular, with a median spiniform rostrum and a supra-orbital spine on each side. Ocular peduncles with the basal segment narrow, cylindrical, elongate. First and second antennae and third maxillipeds similar to those in *Homola*. Chelipeds of female slender, shorter than second, third, or fourth peraeopods. Fifth peraeopods subchelate. Pleon of female seven-jointed, broad, but with narrow triangular telson.

LATREILLOPSIS ALCOCKI, n. sp.

Plate CIV.

From the type-species, the little *Latreillopsis bispinosa*, Henderson, the present form is distinguished at first sight by its far greater size, and, apart from that sometimes untrustworthy distinction, by various details of structure in regard to the second antennae and the limbs.

The acute rostral spine is here inconspicuous in dorsal view by reason of its depression, although the pair of larger flanking spines ascending obliquely to the rear do not interfere with it, as they are wide apart. Each of the three is attended by a subsidiary tooth at some distance from its base. The gastric region is armed to the rear by a strong upright tooth, preceded by a row of four smaller teeth in a curved line between it and the teeth behind the eyes. Various small teeth or spines stud the carapace and numerous strong teeth project from the descending sides. The length of the carapace is 45 mm. The distance between the apices of the spines against which the eyes rest is 18 mm.; behind the neck the breadth widens to 32 mm. between the tips of the lateral spines, the greatest breadth, 44 mm., being reached at a distance of 28 mm. from the apex of the rostrum. A small central spine is observable on each of the first four segments of the pleon, and a very small one on the distal end of the sixth.

The eye has the effect of hanging on the distally narrowed first segment of the peduncle. In the second antennae the penultimate joint of the peduncle is about five times as long as the ultimate as compared with about three times in the type-species. The flagella were imperfect.

The epistome is divided transversely by a curved ridge which bounds a cavity expressly excavated, it would seem, to receive the extension of the third maxillipeds, since all the other mouth-organs were confined within the buccal frame. This narrows slightly to the rear. The mouth-organs agree very nearly with those figured by de Haan for the genus *Homola*, except that he does not show the curious triangular expansion of the exopod exhibited by this species in the first maxilliped. The mandibular palp is three-jointed. The palp of the first maxilla also appeared to be three-jointed, with the third joint wider than the second, but it is rather difficult to make sure of the true articulation in this membranous appendage. In the second maxilliped the sixth joint is larger than the fifth or the seventh. In the third maxilliped the seventh joint is longer than the sixth, which in turn is longer than the fifth; the third and fourth joints are subequal in length and breadth, both strongly setose on the inner margin and denticulate on both margins; the long joint of the exopod does not nearly reach the produced inner angle of the fourth joint of the endopod.

The rather slender chelipeds have the fingers fitting closely together, two-thirds the length of the palm, equal to the fifth joint, the whole hand rather longer than the fourth joint, which is not very strongly spinose. The second and third pereopods are much longer and stronger, with prominent spines on the fourth joint, the finger as long as the fifth joint, about half as long as the sixth, its inner margin furnished with about a dozen graduated spines, increasing in length towards the horny nail; the fourth pair are similar in pattern but rather longer and stronger. In the type-species the sixth joint of these limbs is said to be three times instead of twice the length of the fifth.

The fifth pereopods are much slighter than the three preceding pairs, but somewhat longer than the chelipeds, this superiority depending on the considerably greater length of the fourth and fifth joints, the latter two-thirds as long as the former and rather more than twice the length of the curved subchelate hand. The base of the hand is widened and furnished with strong spines, among which the curved spinulose finger can impinge its apex. It is rather interesting to note that this apparatus, prevalent in the Homolidae, together

with the subdorsal position of the fifth peraeopods, is found again in the genus *Grypachaens*, which Alcock instituted in 1895 for a member of the Oxyrrhyncha, placing it in his subfamily Inachinae, a division of the Mamaiidae.

The specific name is chosen out of respect to my friend, Colonel Alcock, F.R.S., whose writings on the Malacostraca can scarcely be too highly valued.

Locality. Algoa Bay; depth 40 fathoms. A 1450.

MACRURA ANOMALA.

TRIBE PAGURIDEA.

FAMILY PAGURIDAE.

GEN. PAGURISTES, Dana, 1852.

(See S. African Crustacea in these Annals, vol. 6, pt. 4, p. 351, 1910. In this genus the eye-stalks are long and slender, the third maxillipeds are juxtaposed at base, the fourth peraeopods are not chelate; in both sexes the telson is lop-sided to the left; in the female from the left side of the fourth segment a foliaceous lobe forms a brood-pouch [see Alcock, pp. 24, 31, 1905].)

PAGURISTES GAMIANUS, Milne Edwards, 1836.

1836. *Pagurus gamianus*, M. Edwards, Ann. Sci. Nat., ser. 2, vol. 6, p. 283.

1837. „ „ M. Edwards, Hist. Nat. Crust., vol. 2, p. 235.

1905. *Paguristes gamianus*, Alcock, Indian Decap. Crust., pt. 2, fasc. 1, p. 157.

The small female specimen which I diffidently assign to this species has a carapace only 8 mm. long, the chelipeds subequal, setose, the second and third peraeopods also having long setae on the upper and lower borders. The eye-stalks are subequal in length to the peduncles of the second antennae and are shorter than the width of the front of the carapace.

Locality. Umhlangakula River, N.W. by N. 7 miles; depth 50 fathoms. A 851.

PAGURISTES, sp.

A specimen partly dried, with chelipeds and ambulatory limbs detached, seems near to *P. ciliatus*, Heller, as doubtfully re-described

by Alcock in 1905 (*loc. cit.*, p. 34). The carapace is 10 mm. long, the ophthalmic scales well apart, the flagellum of the second antennae 18 mm. long, the acicle curved; chelipeds very unequal, the larger with rows of sharp tubercles on wrist, palm, and fingers; the fourth joint fringed with teeth on inner margin in both members; of the ambulatory limbs one pair has the fifth and sixth joints conspicuously denticulate on the convex margin in one member but only inconspicuously in the other.

Locality. Great Fish Point, N. by W. 7 miles; depth 49 fathoms. A 3268.

GEN. CALCINUS, Dana, 1852.

CALCINUS LAEVIMANUS (Randall), 1839.

(For the genus and species see these Annals, vol. 6, p. 353, 1910.)

The smoothness of the chelipeds and short ambulatory limbs make Randall's specific name very appropriate. Under the name *Calcinus herbstii*, de Man, the species is well described and figured by Alcock in 1905. Several specimens were collected at Mozambique in November, 1912, by Mr. K. H. Barnard, A 3270, and in October, 1912, at Delagoa Bay, one specimen showing the characteristic colouring of the large left cheliped fairly retained; another, with left cheliped missing and the pleon carrying a *Sacculina*, A 2120.

Along with the Delagoa specimens is a small hermit in general resembling the other two, but with chelipeds entirely different, the right slightly the larger, both with hand and finger tuberculate. Only one of the ambulatory limbs is present, and the body is so extensively plastered with parasites as to suggest that the host may be in consequence abnormal. The parasite, about 2 mm. long, is in shape a rather elongate oval, narrowing to a short three-jointed stalk, of which the shortest joint (so far as visible) is inserted in the host.

GEN. CLIBANARIUS, Dana.

(See these Annals, vol. 6, pt. 4, p. 352, 1910, and add—
1915. Kemp, Mem. Indian Mus., vol. 5, p. 240.)

CLIBANARIUS AEQUABILIS, Dana.

1852. *Clibanarius aequabilis*, Dana, U.S. Expl. Exp., vol. 13, p. 464,
pl. 29, figs. 4 a-f.
1888. „ „ var. *merquiensis*, de Man, J. Linn. Soc.
London, vol. 22, p. 247.

1905. *Clibanarius aequabilis*, var. *merquiensis*, Alcock, Catal. Ind. Decap., pt. 2, fasc. 1, pp. 43, 46, pl. 4, fig. 5 (with synonymy).

A specimen which has lost almost all colour distinctions agrees well with Dana's figures of this small species. The carapace has a length of 9 mm., as in the descriptions by de Man and Alcock; its antero-lateral corners are rounded. The eyes are small, the eye-stalk slender, the ophthalmic scales contiguous. In the chelipeds "the upper surface of the wrist hand and fingers is more or less studded with conical spinules interspersed with setae" (Alcock), and the fingers "have spoon-like excavated tips" (de Man). These tips, like the nails of the ambulatory limbs, are dark. The feet of the third peraeopods are unlike, "the penult joint on left side flattened on outer side, and having a subacute edge above" (Dana). The pleon has a series of four two-branched pleopods on the left side.

Locality. East London. A 1545.

GEN. EUPAGURUS, Brandt, 1851.

(For the tribe, family, and genus, see the General Catalogue, Ann. S. Afr. Mus., vol. 6, pt. 4, pp. 349, 350, 356.)

EUPAGURUS ZEBRA, Henderson.

1893. *Eupagurus zebra*, Henderson, Tr. Linn. Soc. London, ser. 2, vol. 5, pt. 10, p. 425, pl. 39, figs. 12-15.
 1905. " " Alcock, Indian Decap. Crust., pt. 2, fasc. 1, pp. 124, 126, pl. 11, fig. 5.

The specimens which I am recording under this name show a general agreement with the description and figures supplied by Henderson and Alcock. At the same time there are differences which may eventually justify specific distinction. In that case I venture to propose *parazebra* for the new species.

For identification the leading features are the slenderness of the second and third peraeopods, with the beautiful stripes of colour on those limbs. But a comparison of the large right cheliped with earlier accounts of it suggest either that it is liable to considerable variation or that the present form is specifically distinct. According to Alcock in the large right cheliped the

carpus "is as long as the merus and considerably shorter than the palm," of which "the inner surface is crossed diagonally by a strong ridge." In our specimens the carpus is much longer than the merus and just as long as the palm, which has no diagonal ridge crossing its inner surface, but only a swelling which runs longitudinally towards the movable finger. Henderson does not specify the relative lengths of merus, carpus and palm, but his figure suggests that they agree with those in the South African examples.

Alcock says of the second and third peraeopods, "the dactyli are about twice as long as the two preceding joints combined," but his figure shows that the words "about twice" should be deleted.

The larger South African specimen has a carapace fully 21 mm. long in the middle line, therefore very much longer than Alcock's specimen with length of carapace nearly 8 mm., or than Henderson's, measuring 21 mm. for the whole animal.

Locality. S.E. of East London, lat. 33° 3' 0" S., long. 27° 57' 0" E.; depth 32 fathoms. Sent by Dr. Gilchrist. No. 47.

EUPAGURUS SPINULENTUS, Henderson.

1888. *Eupagurus spinulentus*. Henderson, Rep. Voy. Challenger, vol. 27, pt. 69, p. 68, pl. 7, figs. 3, 3 a.
 1905. " " Alcock, Indian Decap. Crust., pt. 2 fasc. 1, p. 176.

The specimens which I diffidently assign to this species agree with Henderson's account of the eyes and the ophthalmic scales, of the acicle, and in general of the limbs, although the furrows and denticulation of the chelipeds are much more pronounced than his figures would suggest. He says that "the terminal segment is composed of four nearly equal and symmetrical lobes." In our specimens it would rather be described as an unlobed oblong. The carapace has on the antero-lateral margin the minute denticle shown in Henderson's fig. 3 a.

The only specimen having the right cheliped measured 30 mm. from front of carapace to the end of the telson, while the right cheliped was 37.5 mm. long,

Locality. Umroti River, N. by W. $\frac{1}{2}$ W. 4 miles; depth 27 fathoms. A 1504.

TRIBE GALATHEIDEA.

FAMILY PORCELLANIDÆ.

(For the tribe and family see these Annals, vol. 6, p. 360, 1910.)

GEN. PETROLISTHES, Stimpson.

1858. *Petrolisthes*, Stimpson, Pr. Ac. Philad., vol. 10, pp. 227 (65),
241 (79).
1888. „ Henderson, Rep. Voy. Challenger, vol. 27, p. 104
(with synonymy).
1907. „ Stimpson, Smithsonian, Misc. Coll., vol. 49, p. 181.
1910. „ Rathbun, Pr. U.S. Mus., vol. 38, pp. 558, 599, 616.
1918. „ Rathbun, Bull. 103, U.S. Nat. Mus., p. 134
(fossil).

Stimpson in 1858 gives a list of thirty-four (five of them doubtful) species as belonging to this genus; in his posthumous essay he is contented with twenty-five.

PETROLISTHES POLITUS (Gray).

1831. *Porcellana polita*, Gray, Zool. Miscellany, No. 1, p. 14.
1833. „ „ Gray, in Griffith's Animal Kingdom, vol. 13,
Crust., p. 312, pl. 25, fig. 2. (*Porcellaria*
by error on plate and in index.)
1837. „ „ Milne Edwards, Hist. Nat. Crust., vol. 2,
p. 253.
1847. „ „ White, Crust. in Brit. Mus., p. 63.
1858. *Petrolisthes politus*, Stimpson, Pr. Ac. Philad., vol. 10, p. 227
(65).

The description in Griffith's Crustacea is brief: "Purplish-brown, much polished, and punctulate; the carpus above is flat; the front edge has three long serrated teeth; the hinder edge has a spiny ridge near the end; the forehead is triangular, produced, with the margin rather concave." The figure, though rude, shows closer agreement with our specimen than might be expected from the description. In the chelipeds the teeth on the front or inner edge of the carpus are not serrated, and on the hinder or outer edge the spiny ridge of the eight denticles runs all along, though it becomes more conspicuous distally; the figure also faithfully shows the teeth on the transverse distal margin of the carpus, which are not mentioned in the description.

Stimpson considers *Porcellana magnifica*, Gibbes, 1850, to be a synonym of this species. The colouring in our preserved specimen is very attractive, the chelipeds being a bright red, the terminal joints of the ambulatory limbs barred red and white, their broad fourth joints and the carapace of lighter hue, reddish varied with white. This scheme of colouring is suggestive of *Petrolisthes speciosus* (Dana), 1852. *Petrolisthes armatus* (Gibbes), 1850, re-described by Miss Rathbun in 1910, also makes a near approach to the present species.

Locality. Scotburgh, Natal. A 2244. Collected by Mr. K. H. Barnard.

PETROLISTHES ORNATUS, Paulson.

- 1875? *Petrolisthes ornatus*, Paulson, Zapeste Kiev's Obstch. Estestv.,
vol. 4, pl. 1, fig. 10.
1875. Paulson, Crustacea of the Red Sea, p. 86,
pl. 11, fig. 3.
1878. *Porcellana (Petrolisthes) mossambica*, Hilgendorf, M. B. Ak
Berlin, p. 825, pl. 2,
fig. 6.
1907. *Petrolisthes ornatus*, Nobili, Ann. Sci. Nat., ser. 9, Zool., vol. 4
p. 133.

The first of these references I borrow from Paulson, who does not supply the date. The identification of Hilgendorf's species I accept from Nobili.

The carapace about as broad as long, with salient rostrum and convergent lines of tubercles, as also the shape and armature of the chelipeds, are in good agreement with Paulson's description and figure of the species. The specimen is a female, and was collected by Mr. K. H. Barnard.

Locality. Mozambique. A 2206.

FAMILY UROPTYCHIDAE.

Gen. HAPALOPTYX, nov.

Rostrum represented by a small spine. Pleon of female smooth, folding as in *Uroptychus*. Eyes well developed without orbits. Cutting edge of mandible not denticulate. First maxilliped having a broad curved exopod quite devoid of flagellum as in *Munidopsis*. Second

maxilliped with broad straight exopod carrying a flagellum; the last two joints of the endopod invested with many long setae and spines. The third maxilliped with narrow flagellate exopod. Third joint of endopod fringed with teeth; this joint longer than the fourth, but shorter than the sixth, which with its neighbours at either end is clothed with elongate setae. First peraeopods (chelipeds) of female much shorter than the ambulatory limbs, but longer than the slender minutely chelate fifth peraeopods.

The generic name is derived from *ἀπαλός*, soft, and *πτύξ*, a fold.

HAPALOPTYX DIFFICILIS, n. sp.

Plate CV.

The name *difficilis* is given to this species because with some remarkable features which undoubtedly belong to it there are combined others which occasion considerable perplexity. Of the five pairs of peraeopods only the last pair were observed still in attachment to the body, though along with it were a pair of chelipeds and four elongate spinose ambulatory limbs. Together with this assemblage there occurred a small square-bodied *Megalopa* with narrow pleon and three small detached peraeopods.

Beside the rostral spine the membranaceous carapace has on each side a spine over the base of the eye-stalk and another at each antero-lateral angle, with a small submarginal spine between the antero-lateral and the supra-ocular. From the front the carapace widens with a long curve to the base of the second peraeopod, thence bending inward so as to leave exposed the bases of the third and fourth pairs, and by an angular emargination of the hind border disclosing the first segment of the pleon. On the infolded sides of the carapace there are some prickles not visible in dorsal view.

The eye-stalks are rather stout with dark dilated corneae. The first antennae have a broad basal joint carrying a trifid spine, the second joint much narrower but longer, the third nearly as long as second and first combined, longer than the setose flagellum; the accessory flagellum very small. The second antennae have the terminal joint of the peduncle long and slender with a fine-drawn six-jointed flagellum ending in a long, very thin spine.

The mandible is a broad blade without teeth or serration, carrying a stout three-jointed palp, of which the third joint has four setules at the apex.

Between the first and second maxillae there is a rather close resemblance apart from the latter's possession of the usual vibratory

lamina. As mentioned in the generic character the first maxilliped has no flagellum to its broad curved exopod, thus differing from *Pylocheles*, A. Milne-Edwards, from that author's *Ptychogaster*, and from *Uroptychus*, Henderson. On the other hand, the third maxilliped shows a striking likeness to that in the last-named genus, having its sixth joint longer than any other. The third joint is fringed with twenty-one teeth; the fifth, sixth and seventh joints are profusely furnished with very long setae.

If the detached limbs are correctly allocated (as suggested by the bases of four pairs, these bases being still in attachment to the body) the chelipeds are rather short and slender, the fifth joint very small, the palm widening to the base of the much shorter fingers, which have overlapping acute apices. The following pereopods differ a little in length and are nearly four times as long as the chelipeds, the fifth joint about half as long as the fourth and two-thirds the length of the sixth, all three slender with spinose margins, the finger very small, curved and spinose. The fifth pereopods as preserved are rather obstinately folded, with the fifth joint about as long as the chela, of which the small fingers are shrouded in a mass of long stiff setae.

All the segments of the pleon, except the telson, are broad and to some extent trilobed, with fringes of setae. The telson is somewhat broader than long, faintly emarginate. The rami of the uropods are oval, subequal, these and the telson being also fringed closely with long setae. There were twenty-one large eggs firmly enclosed in the pleon, with the fifth pereopod directed backwards towards them. The carapace has a length of 7 mm., with a breadth of about 6 mm.

Locality. Scotburgh, N.W. by N. 8 miles (Natal); depth 92 fathoms.

MACRURA GENUINA.

TRIBE THALASSINIDEA.

(See these Annals, vol. 6, pt. 4, p. 367, 1910.)

FAMILY AXIIDAE.

(See these Annals, vol. 15, pt. 1, p. 9, 1914; vol. 15, pt. 2, p. 58, 1915.)

GEN. AXIUS, Leach.

1815. *Axius*, Leach, Tr. Linn. Soc. London, vol. 11, pp. 335, 343.

1837. *Axia*, Milne Edwards, Hist. Nat. Crust., vol. 2, p. 310.

1880. *Axius*, Boas, Vid. Selsk. Skr., ser. 6, pt. 1, pp. 98 (76), etc.
1895. ,, Faxon, Mem. Mus. Comp. Zoöl., vol. 18, p. 103.
1901. ,, M. J. Rathbun, U.S. Fish. Comm. for 1900, vol. 2, p. 95.
1903. ,, Borradaile, Ann. Nat. Hist., ser. 7, vol. 12, pp. 536, 549.
1906. ,, M. J. Rathbun, U.S. Fish. Comm. for 1903, pt. 3, p. 893.
1914. ,, Balss, Abh. K. Bayer. Ak. Wiss., Suppl., vol. 2, pt. 10,
p. 85.
1918. ,, Rathbun, Bull. 103, U.S. Nat. Mus., p. 135 (fossil).

AXIUS LONGISPINA, n. sp.

Plates CVIB and CVII.

The character to which the specific name refers, though not superficial, deserves to be particularised. The vibratory lamina of the second maxilla ends in a spine equal in length to all the rest of the organ. Boas figures a spine in the same position for his *Axius princeps*, but he gives it a length less than a third of the maxilla that carries it, and he does not seem to attribute any importance to so unusual a feature. Apart from this the two pairs of maxillae are in near agreement with those of *A. princeps*, and the same remark applies to the first and second maxillipeds except that in the former the exopod has no such distal narrowing as that shown in Boas's figure. In the long third maxillipeds the fourth joint is considerably longer than the third and only a single tooth diversifies its very setose margin.

Not only from *A. princeps*, but from many other species which have been assigned to *Axius* or its various sub-genera, the present appears to be distinguished by the third and fourth pereopods, in which the sixth joint has a much greater width than that of the fifth joint, being a very broad oval in the third pair and in both densely fringed with setae. In the fifth pair the sixth joint is not oval, but a little widened distally. In all three pairs the finger is small, not uncinatè, but in the fourth pair a little curved.

Of the first antennae the first joint about equals the second and third combined; the two flagella are equal in length, the thicker slightly thickening near the end. The second antennae have a small acicle and a slender flagellum about once and two-thirds as long as the flagella of the first pair.

The right-hand cheliped of the first pair is missing; that on the left was probably the larger, being rather massive, with the movable finger curved, its tip crossing that of the slender thumb, which has a setiferous projection one-third of the length from the apex and a

slight backward crook, so that two small intervals are left when finger and thumb meet. The palm is stout, but considerably longer than broad, with a ridge which is continued along the thumb. The fifth joint is short, triangular; the fourth twice as long, with one margin straight, the other strongly curved. The whole limb is only sparingly setiferous, in strong contrast to the following pair and to the two terminal joints in the third, fourth and fifth pairs. In the second peraeopods the fingers of the chela are rather longer than the palm, which has a lateral ridge, such as appears also on the fifth joint.

The first pair of pleopods are uniramous, very slender and moderately setiferous. The four following pairs are richly supplied with plumose setae, the endopod about three times as long as broad, with a narrow retinaculum about one-fourth of the endopod's length, carrying half a dozen hooks or buttons on the apex for linking on to its companion pleopod; the exopod is shorter but much broader than the endopod. The peduncle of the uropods is very small, the endopod transversely triangular, crossed by an indistinct spinuliferous ridge margined to the rear with plumose setae, above which are some shorter spindle-shaped spines or setae; the rather larger exopod has the narrower end pointed backward instead of outward and has no suture.

The carapace of this soft membranaceous specimen was difficult to manipulate. From the short blunt setuliferous rostrum to the middle lobe of the hind margin I make the length 10 mm., and thence to the end of the telson the length of the body was 23 mm. The relative size of the large cheliped may be judged from the length of 9 mm. attained by the hand and fingers, apart from its other joints. The sides of the pleon are setose as far back as the fifth segment, which is shorter than its neighbours. The sixth segment and the tail-fan are in the preserved specimen of firmer consistency than the rest of the body, the sixth segment having a median carina, which, perhaps, commences on the preceding segment and is continued on the telson, but not to the broad setose hind border. The telson slightly contracts near the middle, the sides converging with a gentle concavity to the convex or very obtuse-angled posterior margin.

Locality. Cape Morgan, N.N.W. 7 miles; depth 52 fathoms. A 957.

TRIBE SCYLLARIDEA.

(On this tribe see an important note by Calman, *Ann. Nat. Hist.*, ser. 8, vol. 3, p. 442, 1909.)

FAMILY SCYLLARIDAE.

GEN. THENUS, Leach, 1815.

THENUS ORIENTALIS (Lund.), 1793.

See these Annals, vol. 15, pp. 61-65, in which the position of this species has been fully discussed. A very small specimen has been taken, in which the length of the carapace in the middle line is slightly less than 8 mm., and the greatest breadth between the external teeth of the orbits is 8.5 mm. In this specimen the eyes are a little withdrawn from the outer margins of the carapace.

Locality. Durnford Point, N.E. by E. 9 miles. Depth 13 fathoms.

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EXPLANATION OF PLATES.

PLATE XVIII. (Crustacea, Plate XCVIII.)

Dairoides margaritatus, n. g. et sp.

- n.s. These letters refer to the neighbouring figures of natural size, roughly representing in dorsal aspect the carapace and pleon, and in lateral view the pair of chelipeds (the smaller with movable finger missing) and two of the ambulatory legs from the fourth to the seventh joint. For true appearance of carapace consult description.
- car. A small piece of the carapace as seen by transmitted light, highly magnified.
- a.s. First antenna.
- m., mx. 1, mx. 2, mxp. 2, mxp. 3. Mandible, first and second maxillae, second and third maxillipeds, to a uniform scale.
- prp. Terminal joints of an ambulatory peraeopod, highly magnified.
- Pl., plp. 1, plp. 2. Dorsal view of pleon with first and second pleopods, highly magnified.

PLATE XIX. (Crustacea, Plate XCIX.)

Xeinostoma eucheir, n. g. et sp.

- n.s. Lines indicating natural size of carapace in the male specimen figured below, with first antennae, chelipeds, and (on the left) the peraeopods 2-5, all in dorsal aspect.
- Pl. ♂, Pl. ♀. Pleon of male in dorsal aspect, and similarly that of female showing the four pleopods in position on the right.
- m., mxp. 2, mxp. 3. Mandible and second and third maxillipeds of a male.
- prp. 1, prp. 1, mxp. 3. Chelipeds of a male, the upper figures in dorsal and ventral aspects, the lower showing the companion cheliped in dorsal aspect and in attachment to the third maxilliped for estimate of the relative sizes.
- oc. ♀, a.s. ♀, a.i. ♀. Eye, first and second antennae of female.
- mx. 1, mx. ♀ 2 ♀, mxp. 1 ♀. First maxilla, part of second maxilla, first maxilliped, of female.

PLATE XX. (Crustacea, Plate C.)

Cymonomus trifurcus, n. sp.

n.s. Lines indicating natural size of male specimen figured below in dorsal aspect, without the limbs, but partially showing antennae and pleon; with a lower figure of the ventral aspect in part, with the third maxilliped in attachment.

Pl. D., Pl. V. Dorsal and ventral aspects of the unfolded pleon.

a.s., a.i. First and second antennae.

m., mxp. 1, mxp. 2. Mandible, first and second maxillipeds.

mxp. 3. Third maxilliped, from the inner or upper side, agreeing in scale with the full figure, less magnified than other mouth-parts and the antennae.

prp. 1, prp. 2, prp. 5. First, second, and fifth peraeopods.

plp. 1, plp. 2. First and second pleopods of the male, with terminal part of the second further enlarged.

PLATE XXI. (Crustacea, Plate CI.)

Lithadia barnardi, n. sp.

n.s. Lines indicating natural size of specimen figured below in dorsal view, with first three peraeopods on the right, first, second, fourth and fifth on the left. Carapace probably abnormal on the right front.

Pl. Pleon of female in dorsal view, with telson much more magnified.
ep., mxp. 3, mxp. 3. Epistome and upper and lower surfaces of the third maxillipeds, less highly magnified than the other mouth-organs.

m., mx. 1, mx. 2, mxp. 1, mxp. 2. Mandible, first and second maxillae, first and second maxillipeds.

prp. 1, prp. 2. First and second peraeopods.

PLATE XXII. (Crustacea, Plate CII.)

Cryptodromia micronyx, n. sp.

n.s. Lines indicating natural size of the carapace in the curved dorsal view of a male specimen, with limbs of the right side in attachment.

Pl. Pleon of the male, incompletely flattened, in dorsal aspect.

a.s., a.i. First and second antennae, more highly magnified.

m., mx. 1, 2, mxp. 1, 2, 3. Mandible, first and second maxillae, first second, and third maxillipeds, uniform in scale with the antennae.

- prp. 1, 2, 4, 5. First, second, fourth, and fifth peraeopods, on the same scale as the carapace and pleon.
- plp. 1, 2. First pair of pleopods, and one member of the second pair, with much higher magnification of the latter.

PLATE XXIII. (Crustacea, Plate CIII.)

Eudromia bituberculatus, n. sp.

- n.s. Lines indicating natural size of the carapace in the adjoining dorsal view of a female specimen, with fourth and fifth peraeopods and part of pleon in attachment, the ventral view below showing the left cheliped attached.
- oc., prp. 3. An eye, and distal part of third peraeopod on the same scale as the above.
- a.s., a.i. First and second antennae more highly magnified, on the same scale as the remaining figures.
- m., mx. 1, 2, mxp. 1, 3, plp., plp. Mandible, first and second maxillae, first and third maxillipeds: one of the large pleopods (with rami not quite complete), and the small, last pleopod.

PLATE XXIV. (Crustacea, Plate CIV.)

Latreillopsis alcocki, n. sp.

- n.s.d. Specimen in dorsal view, natural size, with fourth peraeopod in position on the right and fifth on the left.
- n.s.v. Part of specimen, natural size, in ventral view, with first and second peraeopods in position on the right.
- oc., a.s., a.i. Eye, and first and second antennae, magnified.
- mx. 1, mxp. 1, 2, d. First maxilla, first and second maxillipeds, and dactylus of a peraeopod, to the same scale as eye and antennae.
- m., mxp. 3. Mandible and third maxilliped, more highly magnified than the foregoing.

PLATE XXV. (Crustacea, Plate CV.)

Hapaloptyx difficilis, n. g. et sp.

- n.s. ♀. Lines indicating natural size of female specimen figured below in dorsal aspect, with partial view of the ventral aspect.
- Pl. Last four segments of the pleon, flattened out, with the uropods.
- a.s., a.i. First and second antennae.
- mx. 1, 2, mxp. 1, 2, 3. First and second maxillae, first, second, and third maxillipeds, on a uniform scale with the eye and antennae.

- m. Mandible, more highly magnified than the other parts.
 prp. 1. The chelipeds in supposed position on either side of the carapace.
 prp. One of the ambulatory peraeopods.
 prp. 5. One of the chelate fifth peraeopods, with last three joints more highly magnified.
 prp. x. A peraeopod of uncertain allocation.

PLATE XXVIA. (Crustacea, Plate CVIA.)

Nursia scandens, n. sp.

- n.s. Lines indicating actual size of carapace figured below in dorsal and ventral aspects (car. D, car. V.).
 Pl., Pl. V. Pleon in dorsal and ventral aspects, the latter with one of the pleopods separately shown.
 m., mxp. 1, 2, 3. A mandible, and first, second and third maxillipeds.
 prp. 1, prp. 3. First and third peraeopods, less magnified than the mouth-organs.

PLATE XXVIB. (Crustacea, Plate CVIB.)

Axius lougispina, n. sp.

- m., mx. 1, 2, mxp. 1, 2. Mandible, first and second maxillae, first and second maxillipeds, to a uniform scale of magnification.
 mxp. 3. Third maxillipeds, less highly magnified than the other mouth-organs.

PLATE XXVII. (Crustacea, Plate CVII.)

Axius lougispina, n. sp.

- n.s. Line indicating actual length of specimen from which the several parts have been drawn.
 a.s., a.i., plp. 1, plp. 4. First and second antennae, first pair of pleopods, and one of the fourth pair, all to the same scale of magnification as the third maxilliped on plate CVIB.
 ret. apex of the retinaculum of the fourth pleopod much more enlarged.
 prp. 1, 2, 3, 4, 5. The five peraeopods to a uniform scale of magnification.
 T., urp. The telson in connection with the uropods and with some other segments of the pleon. In the actual specimen this part of the body was ventrally infolded.